Career Readiness Courseware & Credentials

winma+h Career-Infused Digital Instruction

Level 4: Expressions and Equations Pretest Answer Key

Question 1:

What value of x makes this equation true?

$5 - 4(x + 8) = 6x + 7$

x = -3.4

Question 2:

Three friends are making purchases in the garden store.

- Betty buys 2 bushes and 1 flower pot for $31.
- Bob buys 1 bush and 3 flower pots for $23.
- Ron buys 1 bush and 1 flower pot.

How much does Ron pay?

a. $3

b. $8

c. $14

d. $17

Continue

Question 3:

Which system of equations has an infinite number of solutions?

a. $2x + 3y = 6$
$6x - 9y = 18$

b. $2x - 3y = 6$
$6x - 9y = 18$

c. $4x - y = 8$
$8x - 2y = 8$

d. $4x - y = 8$
$4x - 8y = 16$

Question 4:

How many solutions are there for this system of equations?

$3x - 2y = 8$

$9x - 6y = 24$

a. 0

b. 1

c. 2

d. infinitely many

Continue

Question 5:

Which situation can best be solved using a system of equations?

a. Jennifer needs to take a shuttle to the airport. The total cost for the shuttle is $20 plus $0.30 per mile (m). What is the greatest number of miles Jennifer can travel in the shuttle and not spend more than $50?

b. The value of a printer was $6000 when purchased. Each year since then, its value has decreased at a rate of 10% per year. What number of years (y) will it take for the value of the copier to be less than one-half of the original value?

c. A race car is traveling around an elliptical track that is 2 miles in length. To win the race, the driver estimates that she must complete each lap around the track at an average time of 36 seconds per lap. What must be the average speed (s) of the race car to win the race?

d. Peter is choosing which of two different machines to rent to clean a carpet. The cost of one machine is $75 plus $2 per liter of cleaning fluid. The second machine costs $60 plus $5 per liter of cleaning fluid. For what number of liters of cleaning fluid (l) are the costs the same?

Question 6:

A telephone call cost $0.15 for the first minute, plus $0.05 for each additional minute. The total cost of the call was $1.30. This equation can be used to find m, the length in minutes of the telephone call.

$$0.15 + 0.05(m - 1) = 1.30$$

What was the length, in minutes, of the telephone call?

$m =$ 24 minutes

Question 7:

The total weight of 2 math books and 3 history books is 8.5 pounds. The total weight of 3 math books and 1 history book is 7.5 pounds. The system of equations below represents the situation.

$$2m + 3h = 8.5$$
$$3m + h = 7.5$$

What is the total weight, in pounds, of 1 math book and 1 history book?

3.5 pounds

Continue

Question 8:

The coordinates of four points are shown below.

Point Q (−2, 2) Point P (0, 7) Point R (3, 4) Point S (−1, −6)

How many points of intersection do $\overline{PQ}$ and $\overline{RS}$ have?

0

Question 9:

Which equation has exactly one solution?

a. $3x + 6 - 5x = -2(x - 3)$

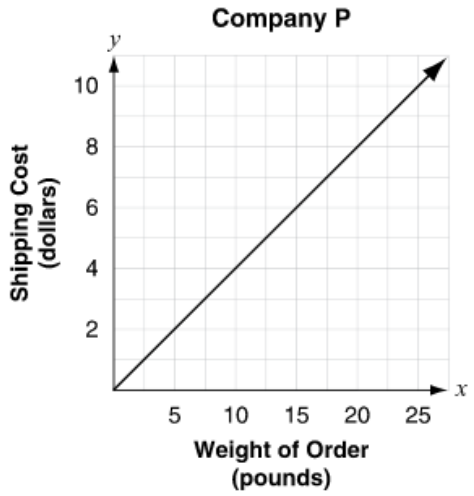
b. $5x + 6 - 3x = 2(x + 3)$

c. $3x - 6 - 5x = -2(x - 3)$

d. $5x - 6 - 3x = -2(x - 3)$

Question 10:

This graph and table show the shipping costs charged by two companies.



Company Q

Weight of Order (pounds)	Shipping Cost (dollars)
4	1
8	2
12	3
16	4
20	5

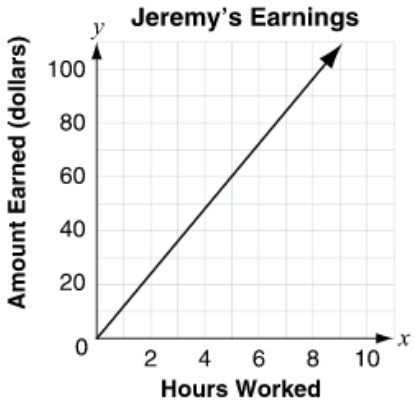
Write an expression for the **difference** in shipping costs, in dollars, charged by the two companies for an order weighing p pounds.

$p(0.40 - 025)$ *or* $0.40p - 0.25p$

Continue

Question 11:

This graph shows the relationship between the number of hours Jeremy works and the amount of money he earns.



Daniel earns more per hour than Jeremy. Which equation could represent the relationship between the number of hours Daniel works, x, and the amount of money he earns, y?

a. $y = 10x$

b. $y = 15x$

c. $y = x + 10$

d. $y = x + 15$

Question 12:

Maria finds the equation of a line containing the points (4, 1) and (–4, 5). Which equation can be used to find b, the value of the y-intercept of this equation?

a. $1 = -2(4) + b$

b. $4 = -2(1) + b$

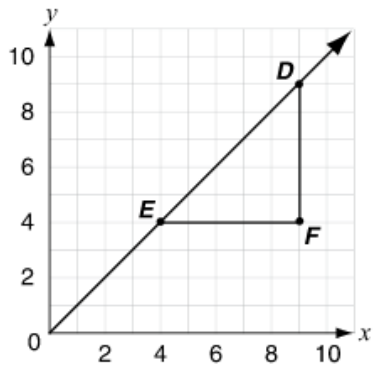
c. $1 = -\frac{1}{2}(4) + b$

d. $4 = -\frac{1}{2}(1) + b$

Continue

Question 13:

The hypotenuse of triangle DEF lies on line DE.



Triangle ABC is drawn so that its hypotenuse, $\overline{AB}$, lies on $\overleftrightarrow{DF}$ and $\triangle DEF$ is similar to $\triangle ABC$.
Which statement must be true?

a. $\overline{DE}$ is parallel to $\overline{FC}$.

b. AC is equivalent to DF.

c. $\frac{AC}{DF}$ is equivalent to the slope of $\overline{AB}$.

d. $\frac{AC}{BC}$ is equivalent to the slope of $\overline{DE}$.

Question 14:

Which equation has an infinite number of solutions?

a. $4x + 5 = \frac{5x+4}{4}$

b. $\frac{1}{4}x = 20 + x$

c. $5x - 10 = 2 + 5x$

d. $\frac{1}{5}x - 4 = \frac{x-20}{5}$

Continue

Question 15:

The routes two birds take flying back to their nest are graphed on a coordinate grid.

- One bird's route is shown by the line $y = \frac{4}{5}x$.
- The other bird's route is shown by the line $y = 2x + 3$.

What is the y-coordinate of the location of the nest?

a. $-\frac{5}{2}$

b. $\frac{5}{2}$

c. -2

d. 2

Stop